AF

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,418	02/14/2005	Caroline Garcy	P08564US00/BAS	6275

881 7590 01/24/2006

STITES & HARBISON PLLC
1199 NORTH FAIRFAX STREET
SUITE 900
ALEXANDRIA, VA 22314

EXAMINER	
JUNG, UNSU	
ART UNIT	**PAPER NUMBER**
1641	

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/524,418	GAREY ET AL.	
	Examiner	Art Unit	
	Unsu Jung	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) *12-22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☒ Claim(s) *1-4* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's amendments to cancel claims 23 and 24 and to amend claims 3-11 and 14-22 in the reply filed on February 14, 2005 have been acknowledged and entered.

2. Applicant's amendment to claim 12 in the reply filed on December 2, 2005 have been acknowledged and entered.

3. Claims 1-22 are pending.

Election/Restrictions

4. Applicant's election with traverse of Group I (claims 1-11) in the reply filed on December 2, 2005 is acknowledged. The traversal is on the ground(s) that no lack of unity was indicated in the International Search Report does not exist. This argument is irrelevant as the lack of unity is made on the current Application as the fact no lack of unity was indicated in the International Search Report does not necessarily suggest that there is no lack of unity in the current Application. Applicant further argues that Wagner et al. (WO 00/04382) fails to teach identifying means enabling each patch (support) of protein array. This is not found persuasive because Wagner does teach an identifying means for enabling the system to identify the support. As the Applicants point out on p2 in the reply filed on December 2, 2005, Wagner et al. states that "location of bound

proteins are determined by optical detector", which would be interpreted as an identifying means enabling the system to identify the support. Furthermore, Wagner et al. teaches a method of labeling of immobilized proteins (p47) to identify the support. Applicant argues that Wagner does not disclose any analysis of the remainder of a sample, whose proteins are not susceptible to capture by the patches. With respect to the limitation of "analysis means for recovering and analyzing a remainder of the sample, whose molecules are not susceptible to capture by the at least one analyte bound to the supports", Wagner et al. teaches an analysis means (p49), which is capable of performing recovery and analysis of a remainder of the sample, whose molecules are not susceptible to capture by the at least one analyte bound to the supports. In addition to Wagner et al., Singh et al. (U.S. PG Pub. No. US 2002/0034827 A1) also teaches the analysis system of claim 1 as discussed below in paragraph 27. The argument regarding search burden is irrelevant as the lack of unity, not search burden is necessary under PCT Rules 13.1 and 13.2. Therefore, the lack of unity does exist between the Groups I and II.

The requirement is still deemed proper and is therefore made FINAL.

Oath/Declaration

5. Receipt is acknowledged of papers filed under 35 U.S.C. 119 (a)-(d) based on an application filed in Great Britain on August 13, 2002. Applicant has not complied with the requirements of 37 CFR 1.63(c), since the oath, declaration or application data sheet does not include the foreign country or intellectual property authority and the day,

month, and year of the filing of the foreign application. A new oath, declaration or application data sheet is required in the body of which the present application should be identified by application number and filing date.

Specification

6. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The use of the legal phraseology, "said" in lines 2, 5, 6, 8, 10, and 11 of the Abstract should be avoided.

7. The use of the trademark PROTEINCHIP® (p4, line 8), AFFIBODIES™ (p11, line 13 and p12, line 17), COPAS™ (p18, lines 18 and 20), MOFLO™ (p18, line 22), and FACSCAN™ (p18, line 22) has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Objections

8. Claim 1 objected to because of the following informalities: the word "a" should be inserted following the word "detecting" in line 16 and a comma is needed following the word "sample" in line 21. Appropriate correction is required.

9. Claim 2 objected to because of the following informalities: the word "target" should be inserted following the word "bound" in line 3. Appropriate correction is required.

10. Claim 3 objected to because of the following informalities: the word "quantitable" in line 2 should be replaced with "quantifiable." Appropriate correction is required.

11. Claim 4 objected to because of the following informalities: the word "spectrophoto,etry" in line 3 should be replaced with "spectrophotometry" and the term "2D-GE" should be replaced with "2-dimensional gel electrophoresis (2D-GE)." Appropriate correction is required.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

14. In claim 1, the term "target molecules" in lines 8 and 11 is vague and indefinite. It is unclear whether or not the term "target molecule" is referring to "capturing target molecules" in line 1.

15. In claim 1, the term "analyte" in line 11 is vague and indefinite. It is unclear whether or not the term "analyte" is referring to "at least one capture analyte" in line 4.

16. Claim 1 recites the limitation "the presence" in line 12. There is insufficient antecedent basis for this limitation in the claim.

17. In claim 1, the term "each support" in lines 14 and 18 is vague and indefinite. It is unclear whether or not the term "each support" is referring to "each support" in line 3-4.

18. In claim 2, the term "target molecules" in lines 1-2 is vague and indefinite. It is unclear whether or not the term "target molecule" is referring to "capturing target molecules" in line 1 of claim 1.

19. In claim 2, the term "analyte" in line 2 is vague and indefinite. It is unclear whether or not the term "analyte" is referring to "at least one capture analyte" in line 4 of claim 1.

20. Claim 3 recites the limitation "the amount" in line 1. There is insufficient antecedent basis for this limitation in the claim.

21. In claim 3, the term "target molecule" in line 2 is vague and indefinite. It is unclear whether or not the term "target molecule" is referring to "capturing target molecules" in line 1 of claim 1.

22. Regarding claim 4, the word "such" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

23. Regarding claims 8 and 10, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

24. Claims 9 and 10 recite the limitation "the identification means" in line 2. There is insufficient antecedent basis for this limitation in the claim.

25. In claim 11, the phrase "the fluid solution is a liquid" is vague and indefinite. The term "fluid solution" already implies a liquid. Therefore, the phrase "the fluid solution is a liquid" is redundant.

Claim Rejections - 35 USC § 102

26. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

27. Claims 1-8, 10, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Singh et al. (U.S. PG Pub. No. US 2002/0034827 A1, Mar. 21, 2002).

Singh et al. teaches an analysis system for capturing target molecules in a sample, the system comprising:

- supports with a largest dimension of 500 μm or less, wherein each support includes at least one capture analyte bound thereto (p4, paragraph [0040]), said at least one analyte being at least one capture agent exhibiting an affinity for one or more of proteins, antibodies, antibody fragments, DNA aptamers, nucleic acids, small molecules and any other molecules used to bind target molecules

(p8, paragraph [0064]), wherein each support comprises identifying means for enabling the system to identify the support (p4. paragraph [0028]);

- engaging means for introducing the sample into contact with the at least one analyte of at least one support in a fluid solution, such that binding of at least one target molecule with at least one analyte is indicative of the presence of the at least one target molecule (p4, paragraph [0039]);
- interrogating means for detecting binding of the at least one target molecule with the at least one analyte, the system thereby being capable of associating each of the support with its corresponding target molecule (p4, paragraph [0040], p9, paragraphs [0076]-[0077], and p13, paragraphs [0111]-[0113]); and
- analysis means such as a mass spectrophotometer (MALDI, p10-11, paragraph [0087]), SALDI-MS (p10, paragraph [0082], and chromatography (p7, paragraph [0059]).

With respect to the limitation of "analysis means for recovering and analyzing a remainder of the sample, whose molecules are not susceptible to capture by the at least one analyte bound to the supports", Singh et al. teaches an analysis means such as MALDI, which is capable of performing recovery and analysis of a remainder of the sample, whose molecules are not susceptible to capture by the at least one analyte bound to the supports. Therefore, the analysis means of Singh et al. would read on claim 1.

With respect to claim 2, Singh et al. teaches the system of claim 1, wherein at least one target molecule captured onto its corresponding at least one analyte is

reversibly bound thereto such that the at least one reversibly bound molecule is susceptible to being recovering, characterized, and quantified using the interrogating means (p11, lines 10-13).

With respect to claim 3, Singh et al. teaches the system of claim 1, wherein the amount of target molecule present in the sample is quantifiable from the amount thereof bond to the at least one capture analyte (p4, paragraph [0038]).

With respect to claim 4, Singh et al. teaches the analysis means for analyzing the remainder to the sample includes one or more of the following for performing the analysis: mass spectrophotometry (MALDI, p10-11, paragraph [0087]), chromatography (p16, paragraph [0146]), and flow cytometry (p13, paragraph [0111]).

With respect to claims 5-7, Singh et al. teaches the system of claim 1, wherein the largest dimension of the support is less than 50 μm (p13, paragraph [0108]).

With respect to claim 8, Singh et al. teaches the system of claim 1, wherein the identifying means comprises one or more of distinguishing geometrical features, which includes shape, size, or barcode, enabling identification of each code (p9, paragraph [0076]).

With respect to claim 10, Singh et al. teaches the system of claim 1, wherein at least one of the identifying means is an optical identification, such as fluorescence (p13, paragraph [0110]).

With respect to claim 11, Singh et al. teaches the system of claim 1, wherein the fluid solution is a liquid (p3, paragraph [0027] and (p16, paragraph [0146]).

Claim Rejections - 35 USC § 103

28. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

29. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

30. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

31. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Singh et al. (U.S. PG Pub. No. US 2002/0034827 A1, Mar. 21, 2002) in view of Mandecki (U.S. Patent No. 5,641,634, June 24, 1997).

Singh et al. teaches an analysis system for capturing target molecules in a sample as discussed above. However, Singh et al. fails to teach an analysis system, wherein at least one of the identifying means is a radio frequency identification transponder (RFID).

Mandecki teaches an electronically-indexed solid phase particle for use in a solid phase assays for biomolecules comprising a transponder and a member of a biomolecular binding pair attached to the transponder (column 2, lines 19-23 and Fig.'s 1-3). A transponder is a radio transmitter receiver activated for transmission of data by reception of a predetermined signal (column 4, lines 25-38). The advantages of the transponder includes reduced dimension, ability to manufacture a large number of transponders on a single silicon wafer, no need for a glass capsule as an enclosure, which further reduces the size of the transponder, and ability of a narrow focus of a beam of a laser light to enable only one transponder to be active at a time during decoding, which significantly reduces noise level (column 5, line 66-column 6, line 24).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include in the analysis system of Singh et al. with a solid phase particle (bead) comprising a glass bead and a transponder, which can be activated for transmission of data by a reception of radio signal (radio frequency), as taught by

Mandecki in order to use encoded beads having advantages of reduced noise level during decoding of the transponder for use in a solid phase assays for biomolecules.

Double Patenting

32. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

33. Claims 1-8, 10, and 11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 16 and 17 of copending Application No. 10/467,890 in view of Singh et al. (U.S. PG Pub. No. US 2002/0034827 A1, Mar. 21, 2002).

The copending Application teaches a system comprising:

- supports with a largest dimension of 500 μm or less, wherein each support includes at least one capture analyte bound thereto, said at least one analyte being at least one capture agent exhibiting an affinity for one or more of proteins, antibodies, antibody fragments, DNA aptamers, nucleic acids, small molecules and any other molecules used to bind target molecules, wherein each support comprises identifying means for enabling the system to identify the support;
- engaging means for introducing the sample into contact with the at least one analyte of at least one support in a fluid solution, such that binding of at least one target molecule with at least one analyte is indicative of the presence of the at least one target molecule; and
- interrogating means for detecting binding of the at least one target molecule with the at least one analyte, the system thereby being capable of associating each of the support with its corresponding target molecule.

However, the copending Application fails to teach a system further comprising a analysis means for recovering and analyzing a remainder of the sample, whose molecules are not susceptible to capture by the at least one analyte bound to the supports.

Singh et al. teaches a combination of segmented nanoparticles (coded nanoparticles), fluorescence based immunoassays, and surface-assisted laser desorption/ionization (SALDI), into one platform, for example, enables a generation of highly sensitive, quantitative, multiplexed immunoassays for known proteins (p9, paragraph [0077]). The ability to merge selectivity, sensitivity, multiplexing, quantitation,

and mass analysis in the same measurement offers, among other benefits, a minimum of 100-fold increase in sensitivity (p9, paragraph [0077]). Singh et al. further teaches mass analysis system such as MALDI (pp10-11, paragraph [0087]), chromatography, and electrophoresis to identify analytes of interest in a sample (p7, paragraph [0059]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include in the system of the copending Application with a combination of selectivity, sensitivity, multiplexing, quantitation, and mass analysis using SALDI, MALDI, chromatography, and electrophoresis as taught by Singh et al. in order to increase sensitivity of measurements by at minimum of 100-fold. With respect to the limitation of "analysis means for recovering and analyzing a remainder of the sample, whose molecules are not susceptible to capture by the at least one analyte bound to the supports", Singh et al. teaches an analysis means such as MALDI, which is capable of performing recovery and analysis of a remainder of the sample, whose molecules are not susceptible to capture by the at least one analyte bound to the supports. Therefore, the analysis means of Singh et al. would read on the claims of the current Application.

This is a provisional obviousness-type double patenting rejection.

34. Claims 1-8, 10, and 11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 20-24 of copending Application No. 10/467,891 in view of Singh et al. (U.S. PG Pub. No. US 2002/0034827 A1, Mar. 21, 2002).

The copending Application teaches a system comprising:

- supports with a largest dimension of 500 μm or less, wherein each support includes at least one capture analyte bound thereto, said at least one analyte being at least one capture agent exhibiting an affinity for one or more of proteins, antibodies, antibody fragments, DNA aptamers, nucleic acids, small molecules and any other molecules used to bind target molecules, wherein each support comprises identifying means for enabling the system to identify the support;
- engaging means for introducing the sample into contact with the at least one analyte of at least one support in a fluid solution, such that binding of at least one target molecule with at least one analyte is indicative of the presence of the at least one target molecule; and
- interrogating means for detecting binding of the at least one target molecule with the at least one analyte, the system thereby being capable of associating each of the support with its corresponding target molecule.

However, the copending Application fails to teach a system further comprising a analysis means for recovering and analyzing a remainder of the sample, whose molecules are not susceptible to capture by the at least one analyte bound to the supports.

Singh et al. teaches a combination of segmented nanoparticles (coded nanoparticles), fluorescence based immunoassays, and surface-assisted laser desorption/ionization (SALDI), into one platform, for example, enables a generation of highly sensitive, quantitative, multiplexed immunoassays for known proteins (p9,

paragraph [0077]). The ability to merge selectivity, sensitivity, multiplexing, quantitation, and mass analysis in the same measurement offers, among other benefits, a minimum of 100-fold increase in sensitivity (p9, paragraph [0077]). Singh et al. further teaches mass analysis system such as MALDI (pp10-11, paragraph [0087]), chromatography, and electrophoresis to identify analytes of interest in a sample (p7, paragraph [0059]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include in the system of the copending Application with a combination of selectivity, sensitivity, multiplexing, quantitation, and mass analysis using SALDI, MALDI, chromatography, and electrophoresis as taught by Singh et al. in order to increase sensitivity of measurements by at minimum of 100-fold. With respect to the limitation of "analysis means for recovering and analyzing a remainder of the sample, whose molecules are not susceptible to capture by the at least one analyte bound to the supports", Singh et al. teaches an analysis means such as MALDI, which is capable of performing recovery and analysis of a remainder of the sample, whose molecules are not susceptible to capture by the at least one analyte bound to the supports. Therefore, the analysis means of Singh et al. would read on the claims of the current Application.

This is a provisional obviousness-type double patenting rejection.

35. Claims 1-8, 10, and 11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14 of

copending Application No. 10/522,377 in view of Singh et al. (U.S. PG Pub. No. US 2002/0034827 A1, Mar. 21, 2002).

The copending Application teaches a system comprising:

- supports with a largest dimension of 500 μm or less, wherein each support includes at least one capture analyte bound thereto, said at least one analyte being at least one capture agent exhibiting an affinity for one or more of proteins, antibodies, antibody fragments, DNA aptamers, nucleic acids, small molecules and any other molecules used to bind target molecules, wherein each support comprises identifying means for enabling the system to identify the support;
- engaging means for introducing the sample into contact with the at least one analyte of at least one support in a fluid solution, such that binding of at least one target molecule with at least one analyte is indicative of the presence of the at least one target molecule; and
- interrogating means for detecting binding of the at least one target molecule with the at least one analyte, the system thereby being capable of associating each of the support with its corresponding target molecule.

However, the copending Application fails to teach a system further comprising a analysis means for recovering and analyzing a remainder of the sample, whose molecules are not susceptible to capture by the at least one analyte bound to the supports.

Singh et al. teaches a combination of segmented nanoparticles (coded nanoparticles), fluorescence based immunoassays, and surface-assisted laser

desorption/ionization (SALDI), into one platform, for example, enables a generation of highly sensitive, quantitative, multiplexed immunoassays for known proteins (p9, paragraph [0077]). The ability to merge selectivity, sensitivity, multiplexing, quantitation, and mass analysis in the same measurement offers, among other benefits, a minimum of 100-fold increase in sensitivity (p9, paragraph [0077]). Singh et al. further teaches mass analysis system such as MALDI (pp10-11, paragraph [0087]), chromatography, and electrophoresis to identify analytes of interest in a sample (p7, paragraph [0059]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include in the system of the copending Application with a combination of selectivity, sensitivity, multiplexing, quantitation, and mass analysis using SALDI, MALDI, chromatography, and electrophoresis as taught by Singh et al. in order to increase sensitivity of measurements by at minimum of 100-fold. With respect to the limitation of "analysis means for recovering and analyzing a remainder of the sample, whose molecules are not susceptible to capture by the at least one analyte bound to the supports", Singh et al. teaches an analysis means such as MALDI, which is capable of performing recovery and analysis of a remainder of the sample, whose molecules are not susceptible to capture by the at least one analyte bound to the supports. Therefore, the analysis means of Singh et al. would read on the claims of the current Application.

This is a provisional obviousness-type double patenting rejection.

Conclusion

36. No claim is allowed.

37. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Unsu Jung whose telephone number is 571-272-8506. The examiner can normally be reached on M-F: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Unsu Jung, Ph.D.
Patent Examiner
Art Unit 1641

LONG V. LE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600
01/20/06